

GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM

Instrument Procedures Group (Originally presented at ACF 92-02) HISTORY RECORD

FAA Control # 92-02-110

SUBJECT: Cold Station Altimeter Settings

BACKGROUND/DISCUSSION: The United States Air Force and the Canadians apply corrections to minimum instrument approach altitudes from the FAF inward, during periods of very cold weather conditions, or cold weather conditions in combination with terrain more than 2,000 feet above airport elevation. Where terrain significantly higher than the airport elevation underlies approach segments the problem is exacerbated. At Medford, Oregon, for example, there is terrain that is 6,000 feet higher than the airport, which underlies the intermediate segment of the VOR/DME-C SIAP. The minimal 500 feet of intermediate segment obstacle clearance can be completely compromised with a surface temperature no colder than -50 degrees c.

RECOMMENDATION: The FAA should institute a directive procedure similar to that used by the USAF for cold weather operations. Where individual SIAPs are identified to have minimal obstacle clearance over terrain that is greater than 2,000 feet above the airport elevation, such procedures should be annotated to apply cold altimeter corrections to the intermediate and initial approach segments, in addition to the FAF inward.

COMMENT: This recommendation would affect directive information contained in the Airman's Information Manual pertaining to the use of instrument approach procedures. It would also affect FAA Order 8260.19B to the extent that flight procedures personnel would be directed to identify and annotate SIAPs that have significantly high terrain underlying intermediate and initial approach segments.

Submitted by: Charles K. Guy
May 13, 1992

AIR LINE PILOTS ASSOCIATION

INITIAL DISCUSSION (Meeting 92-02): Records of the initial discussion and minutes of meetings 93-01 through 94-02 are not available.

MEETING 95-01: Mr. Lyle Wink, AVN-220, agreed to research this on-going problem, pending a study by AVN-100. He will also look into the possibility of a conversion chart.

ACTION: AVN-220.

MEETING 95-02: Lyle Wink, AFS-422, outlined concepts; however, due to the AFS/AVN re-organization he did not have sufficient time to prepare a full briefing for this meeting. Report deferred to the next meeting. **ACTION:** AFS-421.

MEETING 96-01: Lyle Wink, AFS-440, led Discussion on this issue. Criteria development is in progress but not mature enough to be presented to the group. Every attempt will be made to present draft criteria at the next meeting. **ACTION: AFS-440.**

MEETING 96-02: Lyle Wink, AFS-440, briefed that the initial criteria they had developed was too broad in its application and needs further refinement. Don Pate, AFS-450, noted that he had recently attended an ICAO Obstacle Clearance Panel (OCP) meeting where this issue was discussed. To date, there is no international consensus on this issue. **ACTION: AFS-440.**

MEETING 97-01: Jim Nixon, AFS-440, briefed that criteria development is progressing, albeit slowly. He noted that the impact on BARO-VNAV must now be addressed. Areas of concern are the possibility of a requirement for dual minimums and the impact on VDP's and descent angles. Jim stated that AFS-440 hopes to have criteria development completed by the end of the year. **ACTION: AFS-440.**

MEETING 97-02: Jack Corman, AFS-440, briefed that criteria development is progressing. He noted the following recommendations: 1) Publish a temperature adjustment chart in the front of the approach booklets; 2) Publish instructions in the AIM specifying how and when to use the chart; 3) Have air carriers identify locations exhibiting significant indicated altitude error, and make the following annotation on approach charts at these locations: "USE TRUE ALTITUDE WHEN AIRPORT TEMPERATURE IS BELOW ISA". Pilot education issues have to be addressed. Recommendations were well received and initiatives are to be work further. Don Pate, AFS-440, expects to present proposed criteria at the next meeting. **ACTION: AFS-440.**

MEETING 98-01: Jack Corman, AFS-420, briefed that criteria development is progressing, and presented a developmental conversion table for group review. Initial reaction from the group is that the table shows steps are being taken in the right direction. Jack noted that the recommendation to: "Publish a temperature adjustment chart in the front of the approach booklets; publish instructions in the AIM specifying how and when to use the chart; have air carriers identify locations exhibiting significant indicated altitude error; and make the following annotation on approach charts at these locations: "USE TRUE ALTITUDE WHEN AIRPORT TEMPERATURE IS BELOW ISA" is still on the table. Wally Roberts, ALPA, recommended implementation prior to next Winter. Jack briefed that several air traffic issues as well as pilot education issues have to be addressed. The AFS-420 recommendation for a subgroup on this issue was adopted. AFS-420 will continue criteria development, as well as establish a working group to address implementation, and provide an updated report at the next meeting. **ACTION: AFS-420.**

MEETING 98-02: Due to higher priority issues, AFS-420 has not had sufficient time to work this issue. Howard Swancy, AFS-420, briefed that the U.S. is considering the Canadian, Russian and ICAO models for acceptance. Rule-making and an Advisory Circular are also being worked as promulgation methods. It was noted that the rule-making process will take

12-18 months. Another meeting of the ad hoc group studying this issue is scheduled for next month. Hopefully some interim adjustment measure will be available by the end of the year.

ACTION: AFS-420.

MEETING 99-01: Howard Swancy, AFS-420, provided a hard-copy handout outlining progress on this issue. He also provided a briefing on actions within the ad hoc committee (co-chaired by AFS-200 and ALPA) along with specific examples of near terrain impacts and a sample corrective table. Implementation of a national cold weather adjustment plan is hoped for by October, 1999 with public awareness training beginning in May, 1999. Don Pate, AFS-420, emphasized that whatever is adopted/published in the U.S. must be harmonized with ICAO. This issue will be addressed at the ICAO OCP/12 meeting. While working this issue, it was discovered that another industry/government working group was also unilaterally addressing this issue, unbeknownst to the ACF. Kevin Comstock (ALPA) indicated that it was counter productive that another group was addressing this issue in secrecy when he has repeatedly requested input from all sources. This demonstrates once again where the effectiveness of the ACF is limited by attendance. **ACTION: AFS-420.**

MEETING 99-02: Howard Swancy, AFS-420, briefed efforts thus far. There is a draft Advisory Circular (AC) currently in FAA internal coordination. Air Traffic still has some issues to resolve; however, a representative was not available for discussion. Flight Standards is still working with ATA-130 for charts in the TPP booklets. The FAA is still targeting implementation by the end of November. **ACTION: AFS-420.**

MEETING 00-01: Howard Swancy, AFS-4, briefed efforts thus far. There was a draft Advisory Circular (AC) circulated for comments. Comments have been received and a new AC is currently under development by AFS-420. The FAA was targeting implementation by the end of November, 1999; however, the issue is contentious and formal adoption was not realized. The plan now is to educate the aviation community this summer and implement procedures next winter. **ACTION: AFS-420.**

MEETING 00-02: Dave Eckles, AFS-420, presented a status update paper prepared by Carl Moore, AFS-420. A comprehensive FAA policy for cold weather induced altimetry is still under development. Informational material regarding cold temperature induced altimeter error and a cold temperature error table will be published in the January 2001 AIM. When questioned, Deborah Martin, Transport Canada, briefed that cold weather altimeter procedures have been in use in Canada for some time without problems. She stated that this is due to extensive pilot and controller education programs. Kevin Comstock, ALPA, asked who is working the issue formally for FAA and requested the status of the draft AC on this issue. He further stated that his organization would like to see more aggressive action on this issue and recommended a FAA sponsored ad-hoc group be formed to work the issue. Dave responded that he is uncertain of the status of the AC and that AFS-420 will take initiative to lead the effort and consider establishing a formal FAA/industry group to work the issue. **ACTION: AFS-420.**

MEETING 01-01: Dave Eckles, AFS-420, briefed that Carl Moore, AFS-420, has been assigned to work this issue. Brad Alberts, FedEx Pilots Assn., asked when the FAA would have something in writing. Kevin Comstock, ALPA, again briefed that this issue must be worked with input outside of AFS-400. He noted that ALPA has repeatedly requested that an ad-hoc FAA/industry group be formed to work the issue. Dave agreed to carry this message back to Carl. **ACTION: AFS-420.**

MEETING 01-02: Norm LeFevre, AFS-420, briefed that Carl Moore, the AFS-420 specialist assigned this issue, has proposed that procedures be designed with a cold temperature adjustment. The final approach segment altitudes will be adjusted by the pilot based on current temperature. Other procedure segments would include year round adjustments based on the mean temperature minus 3 standard deviations. Statistically, if this were followed, there would be only 12 hours per year where the adjustment would be insufficient. Carl's analysis indicates that segment altitudes, other than final, already have adjustments (airspace, ATC, etc.) that in most cases preclude the necessity for an additional cold weather adjustment. NACO has provided a list of terrain impacted airports, which will be ranked based on temperature and terrain, and then AFS-420 and AVN-100 will discuss implementation alternatives. Kevin Comstock, ALPA, once again briefed that this issue must be worked with input outside of AFS-400. He noted that ALPA has repeatedly requested, to no avail, that an ad-hoc FAA/industry group be formed to work the issue. Norm agreed to carry this concern back to AFS-420. **ACTION: AFS-420.**

MEETING 02-01: Norm LeFevre, AFS-420, briefed that the FAA had a meeting in mid-April to discuss some Baro-VNAV temperature compensation test results from the FAA Technical Center in Atlantic City. AFS-420 is coordinating to have Clyde Jones, the AFS-400 National Resource Specialist (NRS) for weather related issues, to lead this effort. Norm also stated that AFS-420 believes that a single point of contact should help move this effort and the weather NRS is the logical office to do so. If accepted, Clyde will be briefed that industry desires to participate in this effort and that AFS, ATP, AIR, DOD, ALPA and AOPA all have expressed an interest in this issue. **ACTION: AFS-420.**

MEETING 02-02: Tom Schneider, AFS-420, briefed that after the last meeting, AFS-420 wrote AFS-400 requesting that the National Resource Specialist (NRS) for weather related issues lead this effort. Pre-ACF conversation with Clyde Jones, who is currently handling weather issues, indicated that he had not been directed to assume this responsibility. Subsequent conversation between the managers of AFS-420 and AFS-400 clarified that Clyde would work this issue. As a result of the miscommunications, no progress has been made since the last meeting. Tom agreed to ensure that Clyde is forwarded all relevant ACF material as well as all background material from Carl Moore's efforts as the previous OPR. Kevin Comstock, ALPA, reaffirmed industry's concern over lack of progress on the issue and noted that currently, only the inner surface of the final segment has cold temperature adjustments included in draft 8260.RNP. **ACTION: AFS-420 & AFS-400 Weather NRS.**

MEETING 03-01: Tom Schneider, AFS-420 briefed that no progress has been made since the last meeting. AFS-420 has done all that is possible to work the issue from a criteria perspective; it is now an operational issue. The Manager of AFS-400 has been formally requested to provide an OPI to work the issue; however, one has not been assigned. Kevin Comstock, ALPA, suggested that adding an adjustment to allow a procedure to be used down to a predetermined temperature as is done with BARO-VNAV seemed a simple fix. Al Herndon, MITRE, stated that some FMS auto-adjust for temperature. Mark Ingram, ALPA stated that his experience is that the pilot must input temperature. Tom will continue to pursue an AFS-400 staff assignee to work the issue. **ACTION: AFS-420.**
